

Title (en)

DIAMOND-CONTAINING ADHESIVE FOR JOINING REACTION-BONDED SILICON-CARBIDE PARTS

Title (de)

DIAMANTHALTIGER KLEBSTOFF ZUM VERBINDEN REAKTIONS- GEBUNDENER SILICIUMCARBIDTEILE

Title (fr)

ADHÉSIF CONTENANT DU DIAMANT POUR JOINDRE DES PIÈCES EN CARBURE DE SILICIUM LIÉES PAR RÉACTION

Publication

EP 4365153 A1 20240508 (EN)

Application

EP 23150329 A 20230104

Priority

US 202218051756 A 20221101

Abstract (en)

An epoxy-based glue includes an epoxy material, and a solids component including diamond powder and silicon-carbide particles. The adhesive material may be used to form reaction-bonded silicon-carbide bonding reaction-bonded silicon-carbide parts together. The present disclosure also relates to a method of assembling a product from preforms (42, 44), including locating an adhesive layer (46), containing diamond powder (54) and silicon carbide particles (56), between opposed preform surfaces, carbonizing the layer, and infiltrating molten silicon into the preforms and the carbonized layer to convert the preforms into corresponding reaction-bonded silicon-carbide parts, and to convert the carbonized layer into a reaction-bonded silicon-carbide bonding region with a reduced amount of residual silicon. An assembled product, including at least two reaction-bonded silicon-carbide parts bonded together by processing a diamond-containing adhesive, is also disclosed.

IPC 8 full level

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CPC (source: EP US)

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C-Set (source: EP)

C09J 163/00 + C08K 3/04 + C08K 3/34

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